CLAIMS

1. An optical pickup comprising:

a light source which emits a light of a first wavelength;

a two-wavelength light source which emits lights of second and third wavelengths;

a light irradiating unit which irradiates the lights of the first to third wavelengths on a recording medium;

a single light-detecting element which receives reflected lights of the lights of the first to third wavelengths by the recording medium; and

a hologram element which is arranged between the light irradiating unit and the light-detecting element, and which has a different optical effect on each of the lights of the first to third wavelengths.

2. The optical pickup according to claim 1,

wherein the two-wavelength light source emits the lights of the second and third wavelengths from different emitting points; and

wherein the hologram element introduces 0th-order lights of the lights of the first and second wavelengths to a center of the light-detecting element and introduces a diffracted light of the light of the third wavelength to the center of the light-detecting element.

3. The optical pickup according to claim 2, wherein the hologram element diffracts the light of the second wavelength and introduces a 0th-order light of light intensity smaller than light intensity irradiated to the hologram element to the light-detecting element.

4. The optical pickup according to claim 2, wherein the hologram element diffracts the light of the third wavelength and

introduces a 1st-order light of light intensity smaller than light intensity irradiated to the hologram element to the light-detecting element.

5. The optical pickup according to claim 2, wherein the hologram element transmits the light of the first wavelength and introduces a 0th-order light of light intensity equal to light intensity irradiated to the hologram element to the light-detecting element.

6. The optical pickup according to claim 1, wherein the hologram element includes an inner area formed into a circle and an outer area formed in a concentric circle with the inner area in an outer circumference of the inner area, and divides the light irradiated to the hologram into a light passing through the inner area and a light passing through the outer area.

7. The optical pickup according to claim 6, wherein a radius of the inner area is substantially 70% of a light flux diameter formed in such a case that a light of a shortest wavelength of the first to third wavelengths is irradiated to the hologram element.

8. The optical pickup according to claim 6, further comprising a spherical aberration detecting light-detecting element which is provided separately from the light-detecting element, wherein the inner area of the hologram element diffracts a light of a shortest wavelength of the first to third wavelengths and introduces a diffracted light to the spherical aberration correcting light-detecting element.

9. The optical pickup according to claim 6, wherein the inner area and the outer area of the hologram element are formed by gratings having same depths and different pitches.

10. The optical pickup according to claim 2, wherein the hologram element has a lens effect and a deflection effect to the light of the second wavelength, and generates ±1st-order lights of the light of the second wavelength and reduces light intensity of the 0th-order light of the light of the second wavelength.

11. The optical pickup according to claim 2, wherein the hologram element corrects an optical axis shift between the lights of the first and second wavelengths and the light of the third wavelength irradiated to the light-detecting element, and corrects a color aberration generated in the light of the third wavelength.

12. The optical pickup according to claim 11, wherein the hologram element is a part of a diffraction grating formed into a circular-arc shape of plural concentric circles, and is formed by a part eccentric with respect to a center of the concentric circles by amount corresponding to correction amount of the optical axis shift.

13. The optical pickup according to claim 1, wherein the first wavelength is shorter than the second wavelength, and the second wavelength is shorter than the third wavelength.